

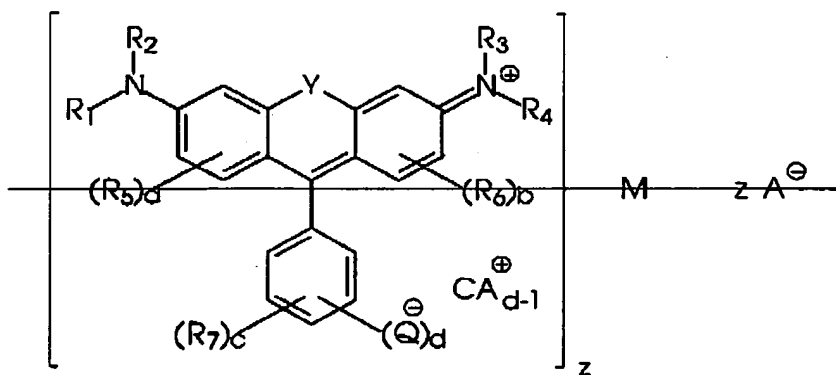
Application No. 10/607,373

AMENDMENTS TO THE SPECIFICATION:

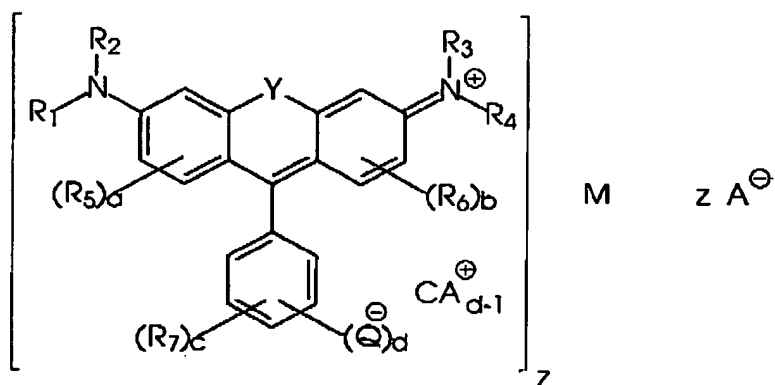
Please replace the amended paragraphs provided below for the indicated pending paragraphs in the specification:

Please replace the following amended paragraph for the pending paragraph at page 9, line 13 to page 13, line 5:

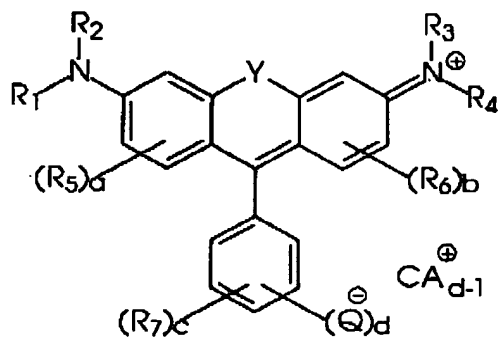
The present invention is directed to colorant compounds. More specifically, the present invention is directed to colorant compounds particularly suitable for use in hot melt or phase change inks. One embodiment of the present invention is directed to compounds of the formula



Application No. 10/607,373

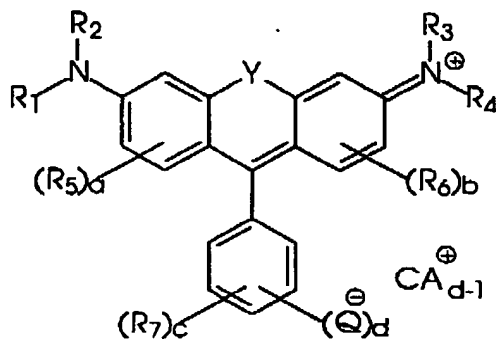


wherein M is either (1) a metal ion having a positive charge of $+y$ to $+p$ wherein y to p is an integer which is at least 2, said metal ion being capable of forming a compound with at least two

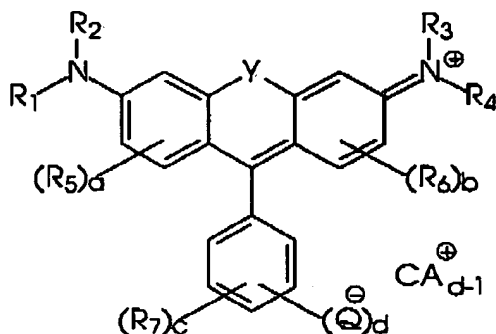


chromogen moieties, or (2) a metal-containing moiety capable of forming a compound with at least two

Application No. 10/607,373



chromogen moieties, z is an integer representing the number of



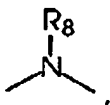
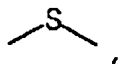
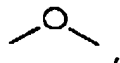
chromogen moieties associated with the metal and is at least 2. R₁, R₂, R₃, and R₄ each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an

Application No. 10/607,373

arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, wherein R₁ and R₂ can be joined together to form a ring, wherein R₃ and R₄ can be joined together to form a ring, and wherein R₁, R₂, R₃, and R₄ can each be joined to a phenyl ring in the central structure, a and b each, independently of the others, is an integer which is 0, 1, 2, or 3, c is an integer which is 0, 1, 2, 3, or 4, each R₅, R₆, and R₇, independently of the others, is (i) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (ii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iii) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, (iv) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl

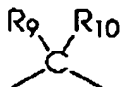
Application No. 10/607,373

group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group. (v) a halogen atom, (vi) an ester group, (vii) an amide group, (viii) a sulfone group, (ix) an amine group or ammonium group, (x) a nitrile group, (xi) a nitro group, (xii) a hydroxy group, (xiii) a cyano group, (xiv) a pyridine or pyridinium group, (xv) an ether group, (xvi) an aldehyde group, (xvii) a ketone group, (xviii) a carbonyl group, (xix) a thiocarbonyl group, (xx) a sulfate group, (xxi) a sulfide group, (xxii) a sulfoxide group, (xxiii) a phosphine or phosphonium group, (xxiv) a phosphate group, (xxv) a mercapto group, (xxvi) a nitroso group, (xxvii) an acyl group, (xxviii) an acid anhydride group, (xxix) an azide group, (xxx) an azo group, (xxxi) a cyanato group, (xxxii) an isocyanato group, (xxxiii) a thiocyanato group, (xxxiv) an isothiocyanto group, (xxxv) a urethane group, or (xxxvi) a urea group, wherein R_5 , R_6 , and R_7 can each be joined to a phenyl ring in the central structure,



or

Application No. 10/607,373

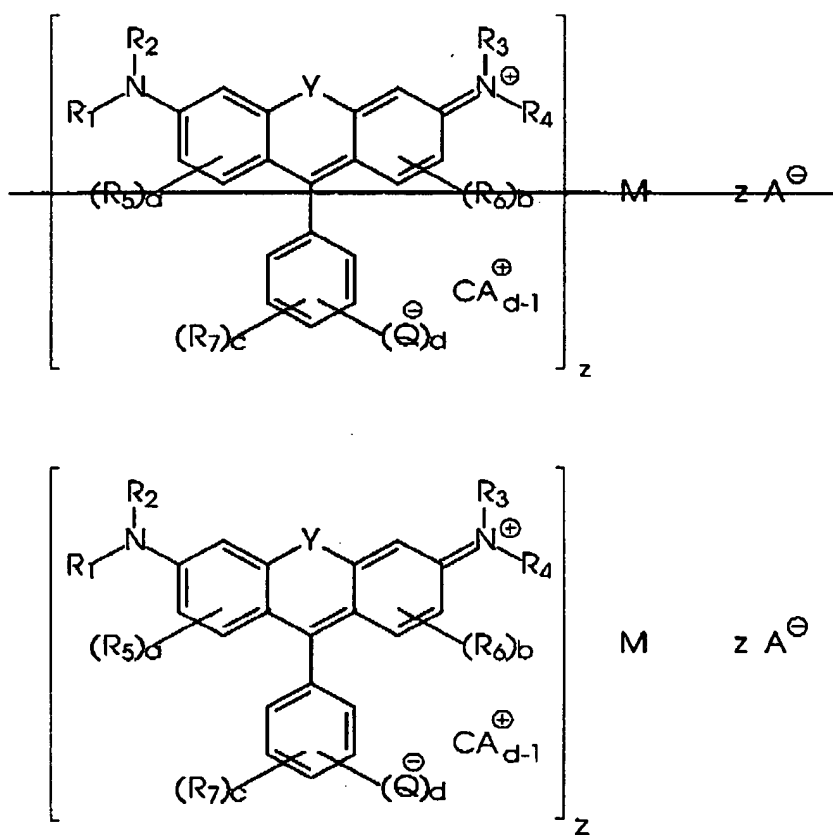


R_8 , R_9 , and R_{10} each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group. (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group. (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group. or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group. provided that the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 16, Q^- is a COO^- group or a SO_3^- group, d is an integer which is 1, 2, 3, 4, or 5, A is an anion, and CA is either a hydrogen atom or a cation associated with all but one of the Q^- groups.

Application No. 10/607,373

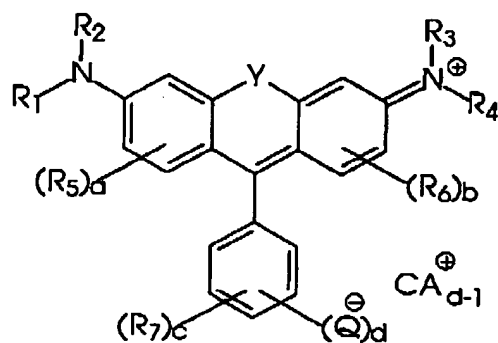
Please replace the following amended paragraph for the pending paragraph at page 33, line 7 to page 36, line 17:

The present invention is directed to compounds of the formula

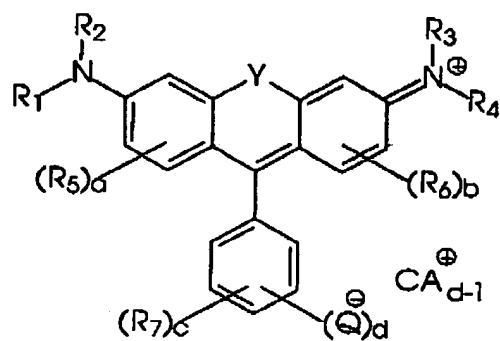


wherein M is either (1) a metal ion having a positive charge of $+y$, y is an integer which is at least 2, said metal ion being capable of forming a compound with at least two

Application No. 10/607,373

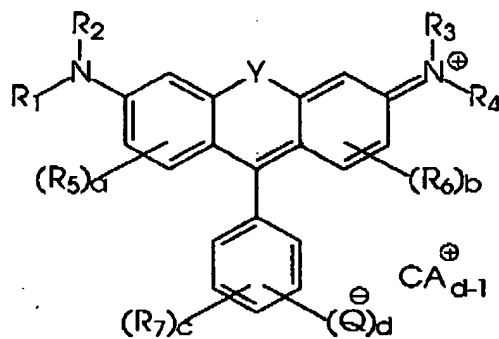


chromogen moieties, or (2) a metal-containing moiety capable of forming a compound with at least two



chromogen moieties, z is an integer representing the number of

Application No. 10/607,373



chromogen moieties associated with the metal and is at least 2, R_1 , R_2 , R_3 , and R_4 each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, wherein R_1 and R_2 can be joined together to form a ring.

Application No. 10/607,373

wherein R_3 and R_4 can be joined together to form a ring, and wherein R_1 , R_2 , R_3 , and R_4 can each be joined to a phenyl ring in the central structure, a and b each, independently of the others, is an integer which is 0, 1, 2, or 3, c is an integer which is 0, 1, 2, 3, or 4, each R_5 , R_6 , and R_7 , independently of the others, is (i) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (ii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iii) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated,

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.